

Claims

1. An isolated or non-naturally occurring DNA construct, the nucleic acid sequence of which comprises (I) a coding sequence coding for an expressible protein which is (a) a pre-prochymosin, prochymosin, or chymosin of a mammal of the suborder Tylopoda or (b) a fusion protein comprising a core protein, wherein said fusion protein is cleavable to release said core protein and wherein said core protein is such a pre-prochymosin, prochymosin or chymosin; and

(II) appropriate expression signals, operably linked to said coding sequence, permitting the protein to be expressed in a host cell.

2. The DNA construct of claim 1 in which the mammal is of the genus *Camelus*.

3. The DNA construct of claim 1 in which the mammal is *Camelus dromedaries*.

4. A host cell transferred with the DNA construct of claim 1, said cell being one in which said expression signals are operable.

5. A method of producing a Tylopoda protein of interest selected from the group consisting of pre-prochymosin, prochymosin, and chymosin which comprises providing a host cell according to claim 4,

cultivating said host cell under conditions where said expressible protein is expressed,

if said expressible protein is a fusion protein, cleaving it to release said protein of interest, and

harvesting the protein of interest.

6. The method of claim 5 wherein the pre-prochymosin, prochymosin or chymosin is a *Camelus dromedaries* protein.

7. The method of claim 5 wherein the nucleic acid sequence codes for a fusion protein comprising pre-prochymosin, prochymosin or chymosin.

8. The method of claim 7 wherein the fusion protein comprises glucoamylase or a fragment thereof.

9. The method of claim 5 wherein the pre-prochymosin, prochymosin, chymosin, or fusion protein is secreted over the host cell membrane.

10. The method of claim 5 wherein the DNA construct is identical to pGAMpR except that said DNA construct comprises a different coding sequence.

11. The method of claim 10 wherein the DNA construct is pGAMpR-C as contained in the *Aspergillus niger var. awamori* strains deposited under the accession numbers CBS 108915 and CBS 108916.

12. The method of claim 5 wherein the transformed host cell is selected from the group consisting of a bacterial cell, a fungal cell, a yeast cell, a mammalian cell, an insect cell and a plant cell.

13. The method of claim 12 wherein the host cell is *Aspergillus niger var. awamori*.

14. The method of claim 13 wherein the *Aspergillus niger var. awamori* host cell is selected from the group consisting of CBS 108915 and CBS 108916.

15. The method of claim 5 wherein the yield of pre-prochymosin, prochymosin or chymosin milk clotting activity is at least 25 % higher than the yield of bovine pre-prochymosin, bovine prochymosin or bovine chymosin milk clotting activity obtained when using, under identical production conditions, an expression vector which differs only with respect to its coding sequence.

16. The method of claim 5 comprising, as a further step, that the harvested pre-prochymosin, prochymosin or chymosin is subjected to a deglycosylation treatment.

17. The method of claim 5 wherein the host cell is a

cell expressing a deglycosylating enzyme.

18. The method of claim 17 wherein the deglycosylating enzyme is endoH.

19. The method of claim 5 in which the mammal is of the genus *Camelus*.